| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/698,405 | 11/03/2003 | Jin-Woo Heo | 45981 | 3431 |

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| EXAMINER |
|---|
| KERVEROS, JAMES C |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2138 | |

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| **Office Action Summary** | Application No. | Applicant(s) |
| | 10/698,405 | HEO ET AL. |
| | Examiner | Art Unit | |
| | JAMES C. KERVEROS | 2138 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on *13 June 2006*.

2a) ☒ This action is **FINAL**.    2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) *1-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-16* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *03 November 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

This is a FINAL Office Action in response to Amendment filed 6/13/2006.

Claims 1-16 are still pending and presently under examination.

Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d), for REPUBLIC OF KOREA Application No. 2002-67756 filed

11/04/2002. The certified copy has been filed in parent US Application No. 10/69840,

filed November 3, 2003.

### *Response to Arguments*

Applicant's arguments filed 6/13/2006, with respect to claims 1-16, have been

fully considered but they are not persuasive.

In response to Applicant's argument, page 3, with respect to claim 1, that Shin's

teaching is concerned with a single block of Turbo code and not a first data and a

second data as required by claim 1, it is noted that during the examination of the

Application, the Examiner gave a broad interpretation of the "first data and second data"

to correspond to a first block and a second block as disclosed by Shin. Applicant's

broad definition of a first or a second data of the claimed invention is equivalent to a first

or a second block of Turbo code having data.  During patent examination, the pending

claims must be "given their broadest reasonable interpretation consistent with the

specification. In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir.

2000). Applicant always has the opportunity to amend the claims during prosecution,

and broad interpretation by the examiner reduces the possibility that the claim, once

issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393,

1404-05, 162 USPQ 541, 550-51 (CCPA 1969). See MPEP 2111, Claim Interpretation,

Broadest Reasonable Interpretation.

For example Applicant's reference of "a packet data decoding performance in a

high-speed packet data communication system" is described in the specification but not

included in the claims. During reexamination, claims are given the broadest reasonable

interpretation consistent with the specification and limitations in the specification are not

read into the claims (In re Yamamoto, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984)).

When analyzing the enabled scope of a claim, the teachings of the specification must

not be ignored because claims are to be given their broadest reasonable interpretation

that is consistent with the specification. "That claims are interpreted in light of the

specification does not mean that everything in the specification must be read into the

claims." Raytheon Co. v. Roper Corp., 724 F.2d 951, 957, 220 USPQ 592, 597 (Fed.

Cir. 1983), cert. denied, 469 U.S. 835 (1984).

In this case, Shin discloses a Turbo decoding method commencing with a Turbo

code block received from a demodulator, as shown in (steps 14-22) by the flowcharts of

Figure 1 and 2. Even though for simplicity purpose only one block is shown, in reality

there are multiple Turbo code blocks for iterations as shown in Tables 1 and 2.

In response to Applicant's argument, page 3, that Shin does not disclose

interrupting the decoding of the first data at a predetermined time before a response

(ACK/NAK) time delay, clearly Shin discloses a counter for decoding iterations, which is

then initialized (i=0) (step 16) and then the counter incremented (i=-i+1) (step 18). The

ith decoding iteration is performed (step 20) and it is determined whether or not this is

the first iteration (step 22). Accordingly, at step 26, it is determined whether the iteration

converges. If so, the iteration process is terminated after generation of an ACK (step

28) and the decoded sequence is output (step 36). If not, it is determined whether the

iteration diverges (step 30). If the iteration diverges, the iteration process is terminated

after generation of NACK (step 32) and the decoded sequence is output (step 36).

The same arguments applied to independent claim 9, since it includes the same

limitations as independent claim 1.

Claims 1-16 are still rejected under 35 U.S.C. 102(e) as being anticipated by

Shin et al. (US 20040006734), as set forth in the present Office Action, below.

### Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under
section 122(b), by another filed in the United States before the invention by the
applicant for patent or (2) a patent granted on an application for patent by
another filed in the United States before the invention by the applicant for patent,
except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application
filed in the United States only if the international application designated the
United States and was published under Article 21(2) of such treaty in the English
language.

Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Shin et

al. (US 20040006734) FILED: December 30, 2002.

Regarding Claims 1-3, 9-11, Shin discloses a method for Fast H-ARQ acknowledgement generation using a stopping rule for turbo decoding in a mobile communication system, Figures 1, 2 and 3, comprising:

Decoding first data using the Turbo decoding method 10 and 70 (steps 14-22), where the method commences by receiving a Turbo code block from a demodulator as shown by the flowcharts of Figure 1 and 2, respectively.

Determining the completion status of the decoder using stopping rule decision unit 114, which checks whether the decoding iteration converges or diverges, or neither. If the decision turns out to be either "converged" or "diverged", the iteration is stopped and either "ACK" or "NACK" indication depending on convergence or divergence is generated for H-ARQ processing. Otherwise, the decoder continues the iteration.

Interrupting the decoding at a predetermined time using a counter by initializing (i=0) (step 16) and then counting incrementally (i=-i+1) (step 18) before generating (ACK/NAK) response. The decoding process is terminated as described in (steps 26-36). For example accordingly, at step 26, it is determined whether the iteration converges. If so, the iteration process is terminated after generation of an ACK (step 28) and the decoded sequence is output (step 36). If not, it is determined whether the iteration diverges (step 30). If the iteration diverges, the iteration process is terminated after generation of NACK (step 32) and the decoded sequence is output (step 36). If the iteration does not diverge, it is determined whether the maximum number of iterations (i=Nmax) has been reached (step 34). If so, the iteration process is

terminated and the decoded bit sequence is output (step 36). If not, the process returns

to step 18 whereby the counter is incremented (i=i+1) and steps 20-36 are repeated.

Regarding Claim 4, 12, Shin discloses receiving a Turbo code block from a

demodulator (step 14, Figure 2) and shown in Figure 3 as a Turbo decoder 100

processes soft-valued input data 102 in each Turbo code block in a transmission, where

the Turbo code block includes a control message (parity bit sequence) and a data.

Regarding Claim 5, 13, Shin discloses Shin discloses response (ACK/NAK),

where the decoding process is terminated as described in (steps 26-36), having a delay

controlled by the counter.

Regarding Claims 6, 7, 14, 15, Shin discloses a counter for decoding iterations

(steps 16-22), which controls the decoding time based on individual data size. For

example, if the iteration does not diverge (step 30), it is determined whether or not the

iteration has reached the maximum number of iterations Nmax (step 34). If so, the

iteration process is terminated and the decoded sequence is output (step 36). If the

maximum number of iterations Nmax has not been reached, as determined at step 34,

the counter is incremented (step 18) and steps 20-36 are repeated.

Regarding Claim 8, 16, Shin discloses implementing a stopping rule for good

code blocks, but also for bad code blocks, which fail to be correctly decoded even at

the last decoding iteration. The result of the stopping rule testing may be used to

determine whether a given H-ARQ process is in error (NACK generation) or error-free

(ACK generation). If the response is NACK, then the Turbo code blocks are

retransmitted, according to H-ARQ protocol.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES C. KERVEROS whose telephone number is (571) 272-3824. The examiner can normally be reached on 9:00 AM TO 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
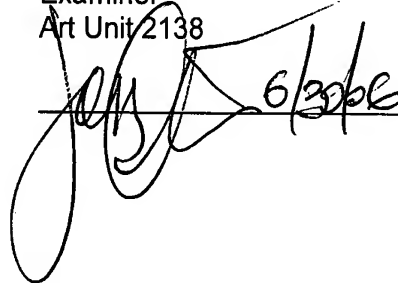
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Office Action: Non-Final Rejection

JAMES C KERVEROS
Examiner
Art Unit 2138